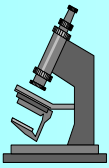


# Advanced Life Support Roadmap

AIR



+ Basic research

WATER



+ Concept feasibility proven

CROP PRODUCTION



+ Fundamentals modeling

FOOD PROCESSING

+ Concept feasibility proven



SOLID WASTE MANAGEMENT  
(RESOURCE RECOVERY)

+ Basic research



THERMAL CONTROL



+ Critical function verified

+ Component/breadboard validation (laboratory environment)



+ Operational envelope determination

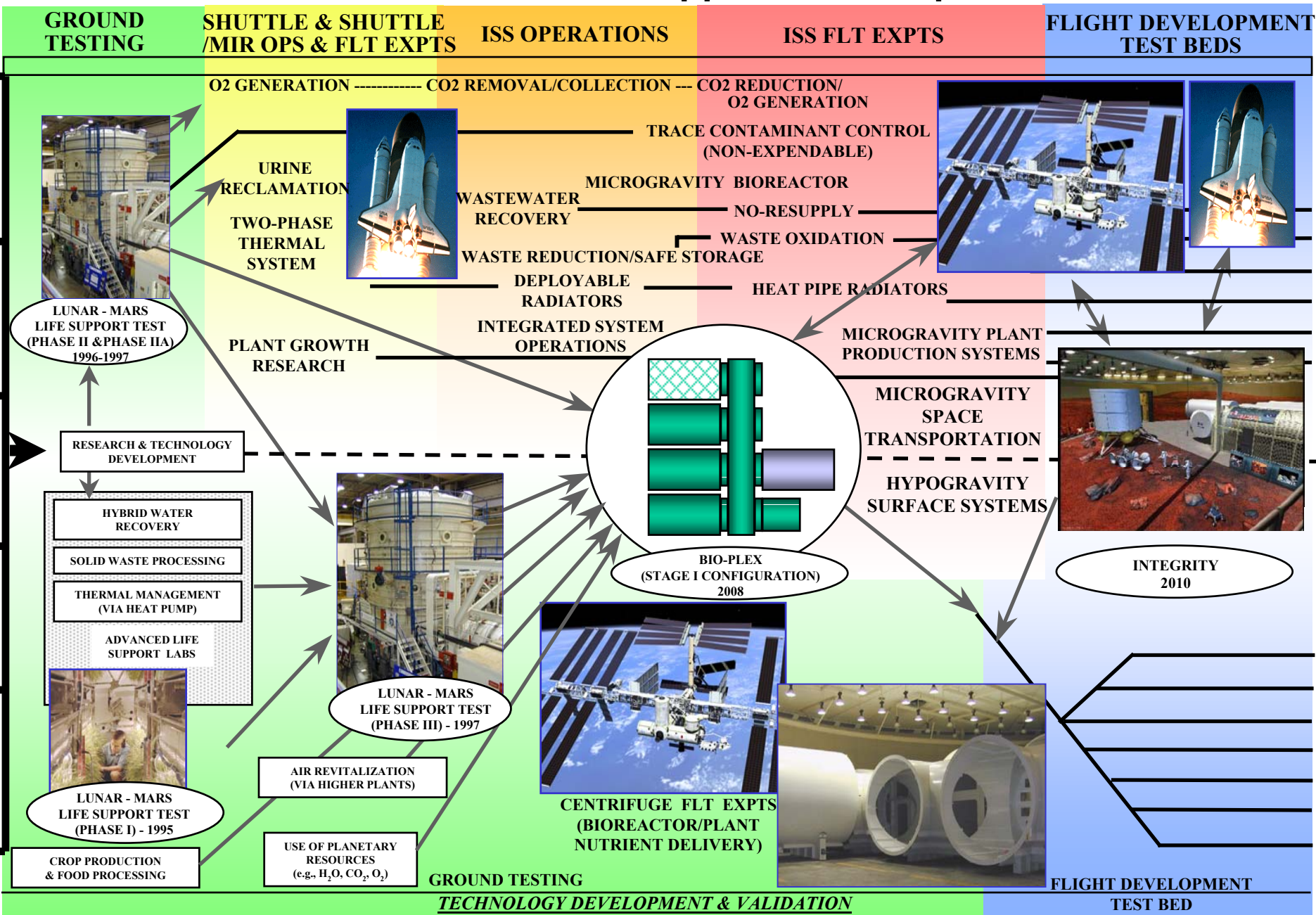
+ Scale-up parameters determined



+ Model development

RESEARCH AND TECHNOLOGY DEVELOPMENT

# Advanced Life Support Roadmap





# Advanced Life Support Roadmap

## NO-RESUPPLY

CLOSED AIR

WATER RECOVERY

SOLID WASTE PROCESSING

HIGH EFFICIENCY THERMAL CONTROL

STORED FOOD AUGMENTATION

INTEGRATED SYSTEMS OPERATIONS

MICROGRAVITY SPACE TRANSPORTATION

HYPOGRAVITY SURFACE SYSTEMS

## SELF-SUSTAINING

AIR REGENERATION

WATER PURIFICATION

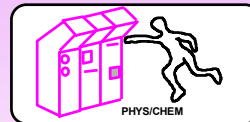
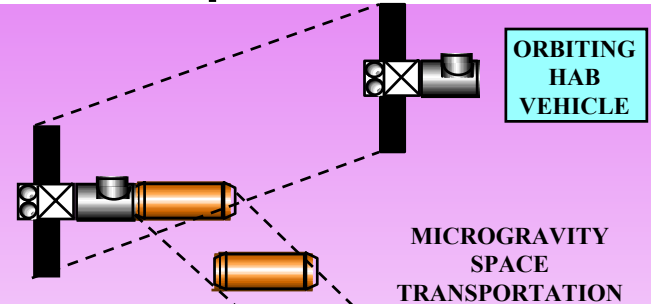
SOLID WASTE UTILIZATION

HIGH CAPACITY THERMAL CONTROL

CROP PRODUCTION & FOOD PROCESSING

INTEGRATED SYSTEMS OPERATIONS

PLANETARY RESOURCE UTILIZATION

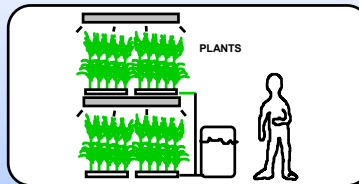


**MULTI-MONTH  
MINIMUM MASS,  
VOLUME, POWER  
LIFE SUPPORT SYSTEM**

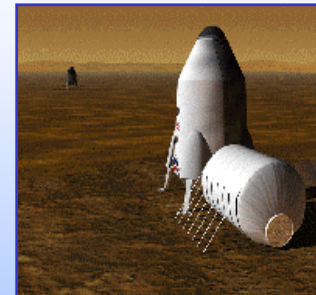
**FULLY REGENERATIVE  
SYSTEM**



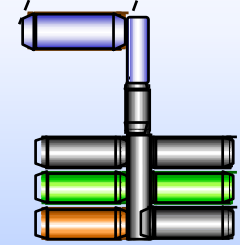
**PLANETARY  
MISSION**



**BIOLOGICALLY-BASED  
SYSTEM**



**CONTINUOUS OPERATION  
SELF-SUFFICIENT  
LIFE SUPPORT SYSTEM**



**HYPOGRAVITY  
SURFACE  
OPERATIONS**

**FLIGHT SYSTEM REQUIREMENTS**